Remarks

Claims 1-24 are pending in the application. Claims 1-24 are rejected. Claims 1, 10 and 16 have been amended. No new matter has been added. It is respectfully submitted that the pending claims define allowable subject matter.

Claims 1-22 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Levinson et al. (U.S. Patent 6,098,408) in view of Ariga et al. (Japanese Patent 403041787 A). Applicants respectfully traverse this rejection.

Levinson et al. describes a system for regulating reticle temperature in a microlithography system. In particular, a back plate 20 supports a reflective reticle 22, which includes an imaging pattern 24. The backplate 20 is part of a chuck assembly 28 for supporting and positioning the reticle 22 during a lithographic process (column 4, lines 33-37). A plurality of thermal electric coolers 30 are distributed on the bottom side of the backplate 20. The thermoelectric coolers 30 provide for heating and/or cooling the backplate 20 so as to regulate temperature of the reticle 22 (column 4, lines 46-50). The thermoelectric cooler 30 includes a matrix of thermoelectric elements 42 formed of n-type and p-type semiconductor material. The thermoelectric elements 42 are connected electrically in series and thermally in parallel. The thermoelectric elements 42 are interposed between two ceramic plates 48-50. The two ceramic plates 48, 50 define either a cold side 48 or hot side 50 depending on a DC voltage connection. With a positive DC voltage applied to an n-type thermoelement (not shown), electrons pass from a p-type thermoelement (not shown) to the n-type thermoelement and the cold side temperature will decrease as heat is absorbed (column 4, lines 51-64).

A temperature monitoring system 54 is also provided operatively coupled to the processor 60 and the reticle 22 (via the backplate 20). The temperature monitoring system 54 operates to monitor temperature of the reticle, preferably at a plurality of portions of the reticle 22. Temperature data relating to the reticle portions are provided to the processor 60 which employs this data in controlling the thermoelectric cooling system 50 to regulate reticle temperature (column 6, lines 9-15). Further, each of a thermistor TR is operatively coupled to the processor 60 to provide the processor 60 with temperature data relating to the

portion of reticle 22 that thermistor TR is monitoring, respectively. Based on the information received from the thermistors as well as other information, the processor 60 drives the voltage driver 110 operatively coupled thereto to control the thermoelectric coolers in a desired manner in order to regulate the temperature of the reticle 22 (column 7, lines 1-10).

Ariga et al. describes a solid-state laser wherein the laser is provided with heat pipes that are cooled by a cooling medium. In particular, heat that is generated at the time of oscillation of a laser crystal 1 is transferred from a fixed stand 2 to heat pipes 3 and then transferred outside of a laser oscillation case body 5 to be cooled by the Peltier effect of thermoelectric elements 7 through plates 6. A temperature sensor 4 indirectly measures the temperature of the crystal 1 through the stand 2, with a signal sent to a controller 10. The controller 10 receives the signal for use in controlling the value of a current that is applied to the elements 7 and maintains the temperature of the laser crystal constant (abstract).

Claim 1, as amended, recites a temperature regulator that adjusts a temperature of an X-ray detector and comprises "thermal insulation configured to thermally isolate the cold plate from electronics of the X-ray detector." The combination of Levinson et al. and Ariga et al. fails to describe or suggest such a temperature regulator.

In particular, neither Levinson et al. or Ariga et al. describe or suggest thermally insulating electronics of an X-ray detector. In both systems, the configuration of the component parts is such that the electronics are located separate from the temperature control mechanism. Accordingly, no thermal insulation is needed. Further, there is simply no description or suggestion of the use of any type of thermally insulating member to insulate electronics. Therefore, for at least the reasons set forth above, Applicants submit that claim 1 is patentable over the combination of Levinson et al. and Ariga et al.

Claims 2-9 depend from independent claim 1. When the recitations of claims 2-9 are considered in combination with the recitations of claim 1, Applicants submit that dependent claims 2-9 are likewise patentable over the combination of Levinson et al. and Ariga et al. for at least the reasons set forth above.

Claim 10, as amended, recites a method for regulating temperature of a medical X-ray detector comprising "thermally isolating at least one of the heat pipe and cold plate from electronics of the X-ray detector." As discussed in more detail above in connection with

claim 1, the combination of Levinson et al. and Ariga et al. simply does not teach or suggest thermally insulating electronics of an X-ray detector, and in particular, thermally insulating electronics of an X-ray detector from at least one of a heat pipe and a cold plate. Therefore, Applicants submit that for at least the reasons set forth above, claim 10 is patentable over the combination of Levinson et al. and Ariga et al.

Claims 11-15 depend from independent claim 10. When the recitations of claims 11-15 are considered in combination with the recitations of claim 10, Applicants submit that dependent claims 11-15 are likewise patentable over the combination of Levinson et al. and Ariga et al. for at least the reasons set forth above.

Claims 16, as amended, recites a system that adjusts a temperature in a X-ray detector comprising "thermal insulation between electronics of the X-ray detector and at least one of the heat pipe and cold plate." As discussed in more detail above in connection with claim 1, the combination of Levinson et al. and Ariga et al. fails to describe or suggest such a system wherein thermal insulation is provided between electronics of an X-ray detector and at least one of a heat pipe and a cold plate. Therefore, Applicants submit, for at least the reasons set forth above, that claim 16 is patentable over the combination of Levinson et al. and Ariga et al.

Claims 17-22 depend from independent claim 16. When the recitations of claims 17-22 are considered in combination with the recitations of claim 16, Applicants submit that dependent claims 17-22 are likewise patentable over the combination of Levinson et al. and Ariga et al. for at least the reasons set forth above.

Claims 23 and 24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Levinson et al. and Ariga et al. and further in view of Batchelor et al. (U.S. Patent 6,446,442) or Van Winkle (U.S. Patent Application Publication 2004/0025516). Applicants respectfully traverse this rejection.

Applicants submit that claims 23 and 24 depend from claim 16 and that even from a cursory review of Batchelor et al. or Van Winkle, it is clear that these references fails to make up for the deficiencies of Levinson et al. and Ariga et al. Therefore, when the recitations of claims 23 and 24 are considered in combination with the recitations of claim 16, and for at

least the reasons set forth above, Applicants submit that claims 23 and 24 are patentable over Levinson et al. and Ariga et al. in combination with Batchelor et al. or Van Winkle.

Accordingly, for at least the reasons set forth above, Applicants respectfully request that the rejections of claims 1-24 under 35 U.S.C. § 103(a) be withdrawn and claims 1-24 allowed.

In view of the foregoing amendments and remarks, it is respectfully submitted that the prior art fails to teach or suggest the claimed invention and all of the pending claims in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the telephone number listed below.

Respectfully Submitted,

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